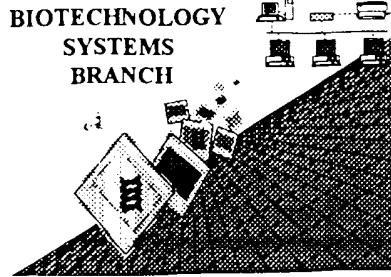


0570  
0906

## RAW SEQUENCE LISTING ERROR REPORT



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/939,209

Source: OIPE

Date Processed by STIC: 9/18/2001

**THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.**

**PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:**

- 1) **INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,**
- 2) **TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY**

**FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.**

**FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.**

**PATENTIN 2.1 e-mail help: [patin21help@uspto.gov](mailto:patin21help@uspto.gov) or phone 703-306-4119 (R. Wax)**

**PATENTIN 3.0 e-mail help: [patin3help@uspto.gov](mailto:patin3help@uspto.gov) or phone 703-306-4119 (R. Wax)**

**TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:**

### **Checker Version 3.0**

The Checker Version 3.0 application is a state-of-the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.

Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

**Checker Version 3.0 can be down loaded from the USPTO website at the following address:**  
**<http://www.uspto.gov/web/offices/pac/checker>**

**Raw Sequence Listing Error Summary**

<u>ERROR/DETECTED</u>	<u>SUGGESTED CORRECTION</u>	SERIAL NUMBER: <u>09/939,209</u>
<b>ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE</b>		
1 <input checked="" type="checkbox"/> Wrapped Nucleic Wrapped Aminos	The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."	
2 <input type="checkbox"/> Invalid Line Length	The rules require that a line not exceed 72 characters in length. This includes white spaces.	
3 <input type="checkbox"/> Misaligned Amino Numbering	The numbering under each 5* amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.	
4 <input type="checkbox"/> Non-ASCII	The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.	
5 <input type="checkbox"/> Variable Length	Sequence(s) _____ contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>.<223> section that some may be missing.	
6 <input type="checkbox"/> PatentIn 2.0 "bug"	A "bug" in PatentIn version 2.0 has caused the <220>.<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>.<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>.<223> sections for Artificial or Unknown sequences.	
7 <input type="checkbox"/> Skipped Sequences (OLD RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence: (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading) (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) This sequence is intentionally skipped	
	Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.	
8 <input type="checkbox"/> Skipped Sequences (NEW RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence. <210> sequence id number <400> sequence id number 000	
9 <input type="checkbox"/> Use of n's or Xaa's (NEW RULES)	Use of n's and/or Xaa's have been detected in the Sequence Listing. Per 1.823 of Sequence Rules, use of <220>.<223> is MANDATORY if n's or Xaa's are present. In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.	
10 <input type="checkbox"/> Invalid <213> Response	Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>.<223> section is required when <213> response is Unknown or is Artificial Sequence	
11 <input type="checkbox"/> Use of <220>	Sequence(s) _____ missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section. (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)	
12 <input type="checkbox"/> PatentIn 2.0 "bug"	Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.	
13 <input type="checkbox"/> Misuse of n	n can only be used to represent a single nucleotide in a nucleic acid sequence. N is not used to represent any value not specifically a nucleotide.	

OIPE

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:04

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

3 <110> APPLICANT: Levitt, Pat R.  
4       Mirnics, Karoly  
5       Kodavali, Chowdari  
6       Nimgaonkar, Vishwajit L.  
W-> 7 <120> TITLE OF INVENTION: Methods and systems for facilitating the diagnosis and  
N-> 8       treatment of schizophrenia  
10 <130> FILE REFERENCE: 00-539  
S-> 12 <140> CURRENT APPLICATION NUMBER: US/09/939,209  
13 <141> CURRENT FILING DATE: 2001-08-24  
15 <150> PRIOR APPLICATION NUMBER: US 60/228,021  
16 <151> PRIOR FILING DATE: 2000-08-24  
18 <160> NUMBER OF SEQ ID NOS: 8  
20 <170> SOFTWARE: PatentIn version 3.1

Does Not Comply  
Corrected Diskette Needed  
*more thorough*

## ERRORED SEQUENCES

22 <210> SEQ ID NO: 1  
23 <211> LENGTH: 2934  
24 <212> TYPE: DNA  
25 <213> ORGANISM: Homo sapiens  
27 <400> SEQUENCE: 1  
E--> 28 gtacgctcaa agccgaagcc acagctcctc ctgccgcatt tcttcctgc ttgcgaattc  
29 60  
E--> 31 caagctgtta aataagatgt gcaaaggcgt tgcaaggctc ccggcttctt gcttggaggag  
32 120  
E--> 34 tgc当地atc atgaaacatc ggcttaggttt cctgctgcaa aatctgatt cctgtgaaca  
35 180  
E--> 37 caattcttcc cacaacaaga aggacaaagt ggttatttgc cagagagtga gccaagagga  
38 240  
E--> 40 agtcaagaaa tgggctgaat cactggaaaa cctgatttagt catgaatgtg ggctggcagc  
41 300  
E--> 43 ttccaaagct ttcttgaagt ctgaatatacg tgaggagaat attgacttct ggatcagctg  
44 360  
E--> 46 tgaagagtac aagaaaatca aatcaccatc taaactaagt cccaggcga aaaagatcta  
47 420  
E--> 49 taatgaattc atctcagtcc aggcaaccaa agaggtgaac ctggattctt gcaccaggga  
50 480  
E--> 52 agagacaagc cggaacatgc taggcctac aataacctgc tttgatgagg cccagaagaa  
53 540  
E--> 55 gatttcaac ctgatggaga aggattccta ccggcgcttc ctcaagtctc gattctatct  
56 600  
E--> 58 tgatggc aaccgtcca gctgtggggc agaaaagcag aaaggaggcga agagttcagc  
59 660  
E--> 61 agactgtgct tccctggtcc ctcagtgtgc ctaattctca cctgaaggca gagggatgaa  
62 720  
E--> 64 atgccaagac tctatgtctt gaaaaacctg aggccaaata ttgatctgta ttaagctcca

format error - see  
item 1 on Error  
summary sheet

→ 60

→ 120

↓

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:04

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

65 780  
E--> 67 gtgcttatac cacattgttag cctaataattc atgctgcctg ccatgtgtga gtcacttcta  
68 840  
E--> 70 cgcataaaact agatatagtt tttgggtttt gagtgttcat cagggtggga cccattcca  
71 900  
E--> 73 gtccaaatttt cctaagtttc tttgagggtt ccatgggagc aaatatctaa ataatggcct  
74 960  
E--> 76 ggttaggtctg gatttcaaa gattgttggc agtttctcc tcccaacagt tttacctcgg  
77 1020  
E--> 79 gatgggttgt tagtgcattt cacatgacat ccacatgcac atgtattctg ttggccagca  
80 1080  
E--> 82 cttctccag actctagatg ttttagatgag gttgagctat gatatgtgct tttgtgtatg  
83 1140  
E--> 85 tctatgtgtat tatatttatata atacattaga cacacatata cattatttct gtatata  
86 1200  
E--> 88 gtctgtgtat acatatgtat gtgtgagtgt atgtatacac acacacacac acacacac  
89 1260  
E--> 91 acacttttgc aagagtgtat gggaaagaccc taggtgctca taactagagt atgtgtatg  
92 1320  
E--> 94 attacatgg gtgttttgc ctctgttctt tcataactaca tttgaacagg gcaaaatgaa  
95 1380  
E--> 97 ctaactgcca tggtagctaa gaaagaaatg ctaacctgtg gaaagtttgtt tttgtaaaat  
98 1440  
E--> 100 tccatggatc ttgctggaga agcatccaag gaacctcatg cttgatttga ccactgacag  
101 1500  
E--> 103 cttccacattt gagcactatt ctaaggagca aataccttag ctcccttgag ctggtttct  
104 1560  
E--> 106 ctgatggcac ttttgagctc ctaagctgcc agccttcctt tcttttcctg ggtgctcagg  
107 1620  
E--> 109 gcatgcttat tagcagctgg gttggatgg agttggcaga caggatgttc aacttaatga  
110 1680  
E--> 112 agaaatacag ctaaggcctt gccagcaaca cctggcgtaa gttactggct gagtggggc  
113 1740  
E--> 115 atagaagttt aaggtaactg tttttatcctt ctatcctttt ttccttcctt gatcaagggt  
116 1800  
E--> 118 ctcttctcat tttttcctga gaaccttagc catcagatga ggctccttag tttattgtgg  
119 1860  
E--> 121 ttgggttgtt tttctttata atggctctgg gctatatgcc tatatttata aaccaggc  
122 1920  
E--> 124 aggggaaaga ttatattta taagaggaa caaatttca caatttggaa agcccacata  
125 1980  
E--> 127 agttttctct tttaaggtag aatcttgtta atttcattcc aaacatcggg gctaacagag  
128 2040  
E--> 130 actggaggca tttctttta ggctctgaga ctaaatgaga ggaaaagaaaa agaaaaaaaa  
131 2100  
E--> 133 aatgattgtc taaccaattt tgagaattac tgtttggaaac ttttcaaggc acattgaaat  
134 2160  
E--> 136 acttggaaac ttctcattta tgtttattt gatgttattt ttttacgtt attattatta  
137 2220

*Done  
JRW*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:04

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

E--> 139 tattgtttta taaatggagg tacaggatat cacctgaatt attaatgaat gcccaggaag  
140 2280  
E--> 142 taatTTTctt ctcattcttc taaaactact gccttcaaa gtgcacacac acgcttccac  
143 2340  
E--> 145 atacactgca ttcgttgctc cagtataat tacatgcattt agcaccttc tggctttaa  
146 2400  
E--> 148 gccaatataa tgggctgcaa aatgaagaca ccagagtgtt tgcataaaaaa tctcaactgtt  
149 2460  
E--> 151 ttaaagatgc aggtttctta attgtaccct tcttgcctt ctggcaatct tggcccttaat  
152 2520  
E--> 154 atccctggag ttccatca gtgtcatttt ctgttataca cagttccaca attttgcctc  
155 2580  
E--> 157 tagttgactt caaatgtgtt actttattgg tcttgcctt ttataattgtt catgacttcc  
158 2640  
E--> 160 agattgtatc tgaactcaca gactgctgtc ttactaatag gtctggaaagg tcacgctgaa  
161 2700  
E--> 163 tgagaagtaa attattttat gtaatacatt tttgagtgtt ttttcagtt gtattccct  
164 2760  
E--> 166 gttatttcat cactatttcc aatggtgagc ttgcctgctc atgctccctg gacagaatac  
167 2820  
E--> 169 tccttccttt tgcatgcctt tttctatcat gtgccttgcata ggcctcaaaag ctaatgcctt  
170 2880  
E--> 172 cagtgaaaca cacgcattt aataataagg gtaaataaaac gctccatatg aaac  
173 2934  
223 <210> SEQ ID NO: 3  
224 <211> LENGTH: 20300  
225 <212> TYPE: DNA  
226 <213> ORGANISM: Artificial Sequence  
228 <220> FEATURE:  
229 <223> OTHER INFORMATION: A genomic sequence containing RGS4 nucleic acid sequence  
230 and sequ *move up*  
231 encies upstream and downstream to the RGS4 nucleic acid  
232 sequence  
234 <400> SEQUENCE: 3  
E--> 235 agttcaagac cagcctgagc aacatggtgaa aacccatctt ctactaaaaa tacaaaatta  
236 60  
E--> 238 gacaggcatg gtgatacacg cctgtatcc cagctacttc ggaggccgag gcaggagaat  
239 120  
E--> 241 cacttgaacc tgctgggggt ggagggttgcg gggagcaaga tcatgccatt gcactccagc  
242 180  
E--> 244 ccaggcaaca agagcgaaat gtcatctcg aaaaaaaaaa aggcatatata tatatatata  
245 240  
E--> 247 tatatatata tacacacaca cacacatata tatatacaca tatatatata catatataca  
248 300  
E--> 250 tatatacaca tatatacaca tatatatata catacatatg tacacatata tatacacata  
251 360  
E--> 253 tgtatacaca tatatacaca tatatacaca catatataca catatataca cacatata  
254 420  
E--> 256 cacatataca cacatataca cacatataca catatataca tatatacaca

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

257 480  
E--> 259 tataataat atacacacat atatatacac atatatacac acatatacac acatatacac  
260 540  
E--> 262 acatatatat acacatatac acacatatac acatatacac acatatatat acatatacac  
263 600  
E--> 265 acatatacac atatatacac atatatacat atatacacac atatatacac atacatatac  
266 660  
E--> 268 acacacatag atatacatat atatacacat atatatacgt atatatatgt atatatatat  
269 720  
E--> 271 gctccagagt tcataagagg tagcagttga ttaccactgg ggatagagga aaagagagtt  
272 780  
E--> 274 tgacagcagt gtattgtgag aaggacattt caggttgatg gcaaatacgta gggaaatac  
275 840  
E--> 277 ataaatgtgt aataaaacct atctgttaagg tagttaagaa ggtaacacta tatataata  
278 900  
E--> 280 tagtgaagc agtgtaaacc taaaggatgg gccaaggatt taaatgttat agaagaatgg  
281 960  
E--> 283 ctaagatgcc aaagctcagt gtatgtggca gaggcatggt gtagggtgtg tccaggttca  
284 1020  
E--> 286 tatattgcat taagtgtgag aacaccctgg agtatgaacc aagaaaatgc aaaagccaga  
287 1080  
E--> 289 agtcatggag gaaatgagac acaataatga agatattgag aggagggtgt gggcttagag  
290 1140  
E--> 292 tgaagctttt cgtgccagta cttctttga aggccagtt ctcttcctc tcgggggctc  
293 1200  
E--> 295 cttcatctct catagagtcc acagcttta agggcaaca cttgaggtca gcctggctct  
296 1260  
E--> 298 ctcatttgag ctggatagaa catttttagag caccatctat tcttcaagag gaagtttaaa  
299 1320  
E--> 301 aataaaagaa ctttgaagag gaaaaatgt agacattcaa tctaaccctt tcattttact  
302 1380  
E--> 304 agccaaagct aaatagaatg cagttacct gttttcagc caggcaccat catttcctaa  
305 1440  
E--> 307 ttgttataaa atttattatt attgttgttta ttattattat ttgccataag aagtttccca  
308 1500  
E--> 310 tattttttt gtataacaaa aacacaattc acaagcatta taaaacccat ggtgtctaac  
311 1560  
E--> 313 tattaaaaaa attaagtggc acacacttgt cccagctact ggggaggctg aggagggagg  
314 1620  
E--> 316 atcacgtgat cccaggggtt caaggttatg gagagctatg attgtgccac tgcactccag  
317 1680  
E--> 319 cctgggtgac agggaaagac cctgtctcta aaatttttt taaaaaaact aaactggttt  
320 1740  
E--> 322 tattacagag attctggaga cagctacaca taaaagggtg gtatgcctca tattagctac  
323 1800  
E--> 325 ccagggaggtt ggaatgccaa cttaggttgtt gtcaccacta taaaaatgc cccaaagcaa  
326 1860  
E--> 328 tcaaaaactga gaacttcctg ggagcttagc atttgcaaa agcagcacaa aacacttaaa  
329 1920

*Marie*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

E--> 331 caattcacag ttgtgttgg aatggaaaggc ctggaaatat aaaccaaaga gtatattgtc  
332 1980  
E--> 334 taaatttata gagattacaa ttgcctgaaa gaaaaagttg acttttaact agaatgttca  
335 2040  
E--> 337 gagtaggttt acagaagaag ctcttaact gggctccagt ggatttgcata atgctttgg  
338 2100  
E--> 340 agctggtggg gtgggagggt tggagggggc ataaaaagtc atgttggat gctctgctca  
341 2160  
E--> 343 agtctccatt ctgtttcattt ttcctctttt caatgtcatg tccattattt tcattatggg  
344 2220  
E--> 346 cttcccttta tccaggatca atatgccacc tcttgggtt ctttaccta cttctccacc  
347 2280  
E--> 349 tcactatgga atcgtcctt ggtagctcct gtgcttggga acctgcacgg gcactttct  
350 2340  
E--> 352 gatgtcttga ttccagcttt actcctaaaa cttaatgct gagggggccaa caccatggca  
353 2400  
E--> 355 gtggtagggg tggaaatggg ggtcttgtaa cacactacat aaactacacg aaataaacta  
356 2460  
E--> 358 catgaaaactc aacatgtttt caagactcag ttcacatcca tgaggagctc atgcttctcc  
359 2520  
E--> 361 ctcctgctcc cctagcacac atgattatct ctattggaa atgttggca tttttggta  
362 2580  
E--> 364 agtgaatggt tcaataactt tctccaccat cagaacaaaa gctcttaag gttagggatg  
365 2640  
E--> 367 ggatcataca cacttccattt gtccaaatcc ccatcacccc ttatctagac aattgctaca  
368 2700  
E--> 370 gtttcctaca cactcttcta acctcttgcgtc gtctatccc ataaaacacg tagagaactt  
371 2760  
E--> 373 tgagatgtaa gtcaaaaaat agaacatgtc gctcttccc attgttttggaa aataaagtt  
374 2820  
E--> 376 caacccctt accagggtca acaaggccct gcaatgattt ggtcctgtta aaaattcttt  
377 2880  
E--> 379 agccttaact catgtgttc ttccatcac tcactgcatt ctgcatttggggatc  
380 2940  
E--> 382 gcatcaaact tttttggc ccagcactgt gcacatcattt ctggtagaa tgcccatttga  
383 3000  
E--> 385 tttgtataat tagcacctcc ttcatcatggggatc aggtcttagt ataactacta cttttaga  
386 3060  
E--> 388 gaagctctgc ttcttcatcc tataaaaaag taaaattcctt taccctgtta ttttttaagt  
389 3120  
E--> 391 catccgtgtt tcattctgtt aaagttcttta tcacaatttta tcattatattt atttacagtc  
392 3180  
E--> 394 atgtgccaca taacaatgtt tcagtcaggatagaacaca aatgtatctg gcccataat  
395 3240  
E--> 397 attataagct gagaatttc tattaaactatg tgatatcgca gccatcataa gtgtatgca  
398 3300  
E--> 400 ggacattacc ttttctatgt ttagatatgt tagatacaca aatataatttc attgtgttat  
401 3360  
E--> 403 aatttcctac agtattcagt acagtaacat gctgtacagg tttgttaacctt aggagtaata

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

404 3420  
E--> 406 ggctatacca tacagcttag gtgtgttagta ggctataacc atctaggttt gtgttaagtac  
407 3480  
E--> 409 attctatgat attcccacaa tgatgaaatc acctaactac acatttctca gaatgtttca  
410 3540  
E--> 412 ctgttgtgaa gtgacccatg actatatttt cctataact tgatattttt gtgcacatctgc  
413 3600  
E--> 415 ccatgagaat gtagtgtaag atcaaaggat gcaagaatgg gttctatcca gtatagtacc  
416 3660  
E--> 418 cactacactg gtggatgtca atatgtattt gttagattaa tatctcaaga atgagcacct  
419 3720  
E--> 421 ttctcagaca cataaaagat gctcaatata aaagttgtt gaactgaacg ttattggcaa  
422 3780  
E--> 424 atgtAACatg atcggattta aagaggagcg aaacagaggt ctggctcaaa caccataactt  
425 3840  
E--> 427 cttagtgca taagaggtag cagttgatta ccactggcga caggagaaaa aagagcttga  
428 3900  
E--> 430 ccgcagggtt ctgtgaagac atttcaggtt gatggcacag aacaggggaa atacataaat  
431 3960  
E--> 433 gtgtggaaat attcagtggt ctgggatgac tacatagtag aatataatga agaaaagagt  
434 4020  
E--> 436 ggaaggggaaa gatgaaaagt tggaaatgggg atgaattatg aaagtaccag aatgttatgc  
437 4080  
E--> 439 taaggaatct agattttaaa atgtgagggc aaattgaagt cctggcacg ttacaaaact  
440 4140  
E--> 442 agaggtcata aagtttaccc taatttacca agatttccta gaggatctat aattggaatc  
443 4200  
E--> 445 cagatctgcc tctctgtaaa gttcaagcac tttccatgac accatactgt ttctttccac  
446 4260  
E--> 448 ctgcacaatg caaatgaact cttatgaaac tgctgtttct atcctggct aaatgttgca  
449 4320  
E--> 451 gaaaaaaagat ttaatctttg ggataaggct attttgggtt ttctcctact tcttgggaaa  
452 4380  
E--> 454 caagggtttc ttcccctggc taattaagtg tggtattgtt cttccaggga aatcagtgat  
455 4440  
E--> 457 gcatcacctg ctgctatcaa atgtcagggc tggagttcct gatttattgc atgtccccac  
458 4500  
E--> 460 aaagcttggc gcaaagaatt ggacacattt cccaaaagta agacatactg ggaagtccct  
461 4560  
E--> 463 gtttaccttc ctggtataca gcatcctcca gccccatatac tttgttttt agtccctaaaa  
464 4620  
E--> 466 atcaataact gaactctcat tgatgtctag gccattgtag taaacaataa agaaggaggg  
467 4680  
E--> 469 aggcttctga caactgagag gaaattgtca tctgaagtgg tgcaagcaca gcctggggct  
470 4740  
E--> 472 gagccttggc ctacatcctg cccaaagtggc ggatcagtgc cccatttaac atctggtaga  
473 4800  
E--> 475 actaaagaac gcaacgcctg ccacaatgac ttattccct gcatttgata ccgtcaatcc  
476 4860

*Marie*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

E--> 478 ttgagaaaatg ttttcttttgc gcaaagggttg gaaaaatttg aaatttaccc  
479 4920  
E--> 481 agagaccaca catagttcac atcctgctgt gtggctgaat gtctgcccc cagtaggaaa  
482 4980  
E--> 484 cagttcttct aaagcctatt gtcaacaata cttccagat gttacatttataaattt  
485 5040  
E--> 487 gaaacttaaa atagccttca aacttttgc cagttctct gatatccat ctattttt  
488 5100  
E--> 490 actctgcctc ccaagcttcc tttctagaat gctaacctga tcggcttaag tacttgaact  
491 5160  
E--> 493 acctcttctc ctccatttaac tacagagtaa attctggctc tcagagtaac aagaaacacc  
494 5220  
E--> 496 cttagttct cagcatatttgc tgcacccctc atttatctct cttctctct caaagctgca  
497 5280  
E--> 499 gtaggggtga aaacgtgtga tacattttctt cttccatcat aagggtcgca accaaaactc  
500 5340  
E--> 502 ctatagtaaa agacaggtta ataagagcaa aacctaaca atttatttaa tcaaagttt  
503 5400  
E--> 505 acatgacatg ggagtcttca gaaatgaaga cccaaagacc cagggaaac tgtctgtttt  
506 5460  
E--> 508 ttttgcgttag gttcgatgaa gaatggatag catgtagcca tgttagattt acaaaaggat  
509 5520  
E--> 511 atgatcttagt ggtaaaggac tcagggggaa acacagcaag gcctgtctat tcagattctt  
512 5580  
E--> 514 cttagtctct ctctcttat gtatagcatt cttccctct ggtatgggg caggactctt  
515 5640  
E--> 517 cttcaatgag ggtttcaag ggagaaggaa gaaagtggcc ttttagatt ttatggcttg  
518 5700  
E--> 520 cttcgggaa gaggagttct agtttctatg acccatctt gggaaagagga attctggttt  
521 5760  
E--> 523 ctgtgacttgc ttcatgaa gaaagaggag taagaggcag gagggcagga gatggcaga  
524 5820  
E--> 526 aagagacttgc gctgttctg agggcttccg ctctcttta gttccaagta cttcttagca  
527 5880  
E--> 529 taccaaaagca ctatactttg gcatatggtt ttctgagctc taacactgca atcatgctaa  
530 5940  
E--> 532 actcctctat gacccctaaa cattccactt gtttttattt tttatggttt tgatggcata  
533 6000  
E--> 535 gaggtcaata gcaaagaccc tggagttccca ctgtctgagc tggcataaca ttactaccac  
536 6060  
E--> 538 ttaatcaatg tgtaagctca ggttaagtact taagtcctct atgcttcattc tgtaaaatga  
539 6120  
E--> 541 gaatcatttgc agaacattct ctcaggatgg atcatgagga ataagtgaat taactggcat  
542 6180  
E--> 544 atagtgcttgc aaccagtgc ttgctcaggatgg agtgcacatgaaaatcatct gttattactg  
545 6240  
E--> 547 tgcccaactat tgtgtatgctc ttctcttctt tgtacaacga ctacatctctt atttatttattt  
548 6300  
E--> 550 ttagggtctc cttgtgaaaa accactccag attcaaaaga ttgagttttaa tctctatcct

*Parne*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

551 6360  
E--> 553 ctgtgcttc ctggagttt gtaaagtaaa tcttcacttg acatcatgga taggttcttg  
554 6420  
E--> 556 gaaactacaa cttcaagtga aaggacataa ctaaaccaat tttttctca tcaacgttat  
557 6480  
E--> 559 aatgaaatgg cattgatgaa atgatggcat tcaaggacct gctgtacctt gtttcaactta  
560 6540  
E--> 562 aagtcaactgt ttccaataat ctattgatga cattgaggac ttactatata ataataaata  
563 6600  
E--> 565 tataataat cgacgaaaca ggaatcaaac tgctaactct gctaactggt ctccctgctt  
566 6660  
E--> 568 ccacactctg cccactcatc tcagtcttc tttcacaaga gtcagaatga tcagatgaga  
569 6720  
E--> 571 cccctcctct gttctgttt cttccatgga tttccactgc actctgataa agtccagcct  
572 6780  
E--> 574 cttgaccaca gcctacaaat cttgcacga tctatcggtt actttccat ctccctttat  
575 6840  
E--> 577 gctactttca tcttgttctc aattctctag ctatgctggc cccttcttgc tctttccat  
578 6900  
E--> 580 ttttttttaa tttttaaaat ttgtatatat ttatgggta taagtgaaat ctttttagat  
581 6960  
E--> 583 gcataggttt tatagtgata aatcagggc ttttagggta ttcatcacct gaatgatgta  
584 7020  
E--> 586 cattgtaccc cttaagtaat ttctcaccat ccgctgactt cttgccccct gggtattcat  
587 7080  
E--> 589 cacctgaatg atgtgcattt tacccttaa gtaatttctc accatccgct gacttcttgc  
590 7140  
E--> 592 cccctgggta ttcatcacct gaatgatgtt cattgtaccc cttaagtaat ttctcaccat  
593 7200  
E--> 595 ccgctgactt cttgccccct catccttctg aggctccatt gtccatcatt ccacactcta  
596 7260  
E--> 598 catctatgtt tacacattat ttagctccta cttataagtgtt ataacatgca atatttgtct  
599 7320  
E--> 601 ttctgtgtct gtcttgggtt acttatgata atggcccca gttctatcta ggctgctgca  
602 7380  
E--> 604 aaaggcatga tttcattttt ttttatggct atgttcttc ccaattttaga taaagaacac  
605 7440  
E--> 607 tcgcacttgc tcttacttctt atttggaaata ctaattccta ggcttcttgc attgctttct  
608 7500  
E--> 610 ccttctcacc catcaaatct catttttagat accaccttcaaaagaggc tttcctgacc  
611 7560  
E--> 613 accttggctg aattagccct tcaccatctg attactcttctt agcacatcac ctgccccattt  
614 7620  
E--> 616 tattcatggt acaggtcaaa atctggaaatc acctgatttg tttatattctt gactccttct  
617 7680  
E--> 619 actgagatga aaactctact agagcggaga ttttatctgc ttgtatcagg tactgcttca  
620 7740  
E--> 622 aacagcacct gatacagagt aggtggtcaa aagatatttc ttaaacaat gaacaataa  
623 7800

*Dan*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

E--> 625 aaagtagatc tttttagatc aaagctcttc cacactacca gagtcattca ggaatgacaa  
626 7860  
E--> 628 atcatagaat aacagaattt gatgcttgtt gcatacaga gaaagaagggt ggaagggttgt  
629 7920  
E--> 631 caaggttatca tgatgtacca gtcctcgctt cctcaaacac aatctgcaag tcccacagt  
632 7980  
E--> 634 aaaaagtaag ttaactcatg tgaagcgttt tacaaacact tttttaaaag tctttaaaact  
635 8040  
E--> 637 cctaagaaag caagattaa tagtcaaaga agtgagtaaa catgaaatgc ctgaacagag  
638 8100  
E--> 640 taatgagcta agcacaaggat tagagacatg ttagttaata tgtcttgaaa gcagcagctc  
641 8160  
E--> 643 ctgcatttcaa ggagcaagaa caaattgggc aagtgaacac tccttgaata aaatgtgtaa  
644 8220  
E--> 646 atttaatttt gggttatgtt ctatactgtg tataatagaa tgataaaaat tatttgacta  
647 8280  
E--> 649 gcactttgtt gtttagaaat atctctattt acacagttt ctttatttga taagactgtt  
650 8340  
E--> 652 gagtgatggg atagcatggg ggacaatcca cataactgag tatcgagaca cctgtatctg  
653 8400  
E--> 655 gacccttc tgtagttaag aagctgttac ctcagcaagt cacttcttct ttctgggtct  
656 8460  
E--> 658 ctatccctt ttgggtgaaa tgagagtgtt aggcttagatt gccttgaag tcccattttg  
659 8520  
E--> 661 tctttaagt cccatctattt gcagtgttattt atatttaactt catgacaaat caggcttc  
662 8580  
E--> 664 ttattctaag tgcaagacat aaaacttttta ttgtgaaattt tcaggcatca gtaaatctt  
665 8640  
E--> 667 ttgggtactc acttatgttc ctgaaatcaa tctattttagt tgatcactct tttaggtgcc  
668 8700  
E--> 670 caggtaaaca aagaaggcca tggctttctt ttgagtgacc ttcttccctt ttaatttagt  
671 8760  
E--> 673 ctgacctctt taatgtcagt tctgactgtat tcatttccctt ggtccatctt cttggct  
674 8820  
E--> 676 agggccttcc tagttcata ttgcacttca gttccttcca caccaccatc aaggatggct  
677 8880  
E--> 679 gtcaacattt atttgttcta tggataattt caaggaaaag ttgcccagta gctaattccaa  
680 8940  
E--> 682 taaatgcctt cttatggcg gctagagact ttttccata atttaaatgc atcttctgt  
683 9000  
E--> 685 gattatggtc cttccaccatc ttacatttgc tctgctgtct cttgctctg ctatgtcatgg  
686 9060  
E--> 688 aacgtgttgg tagtggggc agtgtggat gttcaaggc acgtattggg tagggccaca  
689 9120  
E--> 691 tatggcatt gctttgtgcc attctttcta tattttgtt atttgcattc tcactggAAC  
692 9180  
E--> 694 ccaactattt ttcatctctt ccacctaaac tatttgcattc ctctgtttctt tatataaaa  
695 9240  
E--> 697 gtatagctca ctgttagcata tgatcaggaa cctatctgct ttctaaatga aagctgtttt

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

698 9300  
E--> 700 ggtcagatct agcaattaat tcccttcttc cacttatagc tttcctctgt aactctggtg  
701 9360  
E--> 703 taggtatttg gtttatggct ataagatgtg aaacacctga atgattctgt ccatgcaggc  
704 9420  
E--> 706 atttcagttc atgatattgt atgtaaaaga tactgattgt ctaggtgttc agaaacacct  
707 9480  
E--> 709 atagggctta atattcttac aatcagttt aaggctggtg atacgcaaag caaactacat  
710 9540  
E--> 712 atttttctgc ctgctctc tctttctc tacatctc tttctttatc ttttgaata  
713 9600  
E--> 715 tcagtttggaa gacttagaat tacataagac ataaacccat ttgatataag aattgctgtg  
716 9660  
E--> 718 tatatttgc catctactcc ctcctttggc cctcgagctg ccggttttaga ctttttacag  
719 9720  
E--> 721 gacgcaggca tgtgaaggag aaactgtcag tgctaggctg aattctgtt aaccat  
722 9780  
E--> 724 ttcttagaaaa gtattcctca gtcaggttga ttacagatat agcaaattca ttttccttag  
725 9840  
E--> 727 gtagtttct gtatgctgcc gggcttataa ctgtctgtca tccagctatt tctctccacc  
728 9900  
E--> 730 ttcttggggc cataacaacc aaggcaactt ccgcattatca ctgcgtggag acgatgtcc  
731 9960  
E--> 733 tgccagctcc cttttggaaa tcgtgaggat cagatctgg accatgtata atatgtct  
734 10020  
E--> 736 tctaattccaa aagaggaaag gcattggag tcagtccta agtaagctcc agaattcctg  
737 10080  
E--> 739 ctggtaactt tccttccagg aagcaacttc cttgatattt ttttttaca ggcataatgaa  
740 10140  
E--> 742 taaaaactat attttgcagc attgtacact tttttccctt ttcttagaaat tctaaaccc  
743 10200  
E--> 745 tgacatttgtt ggagacattt agtacattt ttcccatatc cctactttc agaaggattt  
746 10260  
E--> 748 tctctgctcg ttcaacttaac attgctgatg cgtcagtctt ttcttcctca tctcttcag  
749 10320  
E--> 751 gggctggaga ggcagagggaa gacagaggag ctggtaactgc agagcggtcg tctgattggc  
752 10380  
E--> 754 tggacggtcg tagctggct ataaaagaga cccctacagg cttagcagga agacgctcag  
755 10440  
E--> 757 aggattctga caatatcttt accggagaag aggcaaagta cgctcaaagc cgaagccaca  
758 10500  
E--> 760 gctcctcctg ccgcatttct ttccctgctt cgaattccaa gctgttaat aagatgtca  
761 10560  
E--> 763 aaggcatttc aggtctgccg gtttcttgc tgaggaggta agattgcttt cagccattaa  
764 10620  
E--> 766 ccatattaaa cttttggcta gactttctca gttatttaca tgggttactt actaacctag  
767 10680  
E--> 769 ttctgtgcaa ttagaaacag tgggttcagg agagcacgac tttctaactt tcctccaaga  
770 10740

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

E--> 772 ctagctagat attgtgactt aagacatgtg ctcccaaata ttcagccctt atgtgttgtt  
 773 10800  
 E--> 775 ttgtgtgacc tcagtttga gaaactgttct attcttaag ccaggtctaa gaaagctagt  
 776 10860  
 E--> 778 tttaattaag aagcgagatg aggtttgagg ctatgtacag tgatctgtaa tatctccatc  
 779 10920  
 E--> 781 tgtgattact actgttattt gagcatccct ggagtacata gaagcctggc tctgggcttt  
 782 10980  
 E--> 784 ctgattgtat gctacaactt gtttcaggaa aggtacccca gaatgagggtt tggctccatc  
 785 11040  
 E--> 787 atcagaaaagg cactatgctt tccgtgttgtt ggtgcagtaa ctttcaactct ctatgttctt  
 788 11100  
 E--> 790 ataagcaaat gttacaatga gatatgagtt ttaaagccag atcttcctta tctctctgcc  
 791 11160  
 E--> 793 ccatctctag ttcttgaagt gtctcatatg agtttgggtt agaaatattt atcattacaa  
 794 11220  
 E--> 796 atcagttaat agttttgttag aagatctcat cttaaagaca ttgttttgtt aataactcc  
 797 11280  
 E--> 799 ctgttatttt ttaaaagacc ttacagacat acagctattt atttgggttca  
 800 11340  
 E--> 802 aaaaaggat aaagaaaatgc attcagagaa agatcatata tttagccagtt gaaaatttttt  
 803 11400  
 E--> 805 cacaaaatga gtgcatttta cattacttaa tcttgcagtc aaaggtaaaa agtcaaccta  
 806 11460  
 E--> 808 aaggtaact acctgttttc ttatcgact gcaaataaaaaa attaccacaa attttttttt  
 809 11520  
 E--> 811 gaaaaataatc tcagaaaaca taatttttta tgtactttaa aacatttac tttccaaata  
 812 11580  
 E--> 814 ttctgtcatt caggagtatg gaagtatcga tggcttcttt aaaatgaagc aggagggtct  
 815 11640  
 E--> 817 ggcagagagt atctatgaaa taagttcctc tgaccttcac gcttaatttt ctgaatggag  
 818 11700  
 E--> 820 tggagcaat tacttcaagc ttcacttaac ttgcataatga aatgaaccgt aaaaaataac  
 821 11760  
 E--> 823 aagagtgtca ggagaaaagtt atgctcttgtt aaatattttt caaaacagat aaaagataat  
 824 11820  
 E--> 826 actagagctc tgctctcaaa gagttaaagca gctaattctaa ggaggtaaac tctatgtcag  
 827 11880  
 E--> 829 caggatgaac tgctctccc ttcccttc aataaattgc aatcatcttta gtccaaatc  
 830 11940  
 E--> 832 ttaccacca gtgcctgagg ctccagagga gccattgcct tctcaaggc acatagggtt  
 833 12000  
 E--> 835 tgggtgaggaggatccat ctagaattcc tgactccagt aacttctgaa gtcattttgt  
 836 12060  
 E--> 838 tttttatttt tatggttta ttataagaat acttgctaag cacacttacc ccctgcattt  
 839 12120  
 E--> 841 attaataact ctaggatctc aggtggatcc agcacataga aatatgaatt cgtttctatt  
 842 12180  
 E--> 844 tggacttcat gatatattta cattatcacc ttggaaatcac cctaacattc aggattgtat

*Mark*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

845 12240  
E--> 847 cttgttataa tcaaaaagga tggcatcc cctgaacagt catcagtcag ggaagcagag  
848 12300  
E--> 850 gaggggaaagt aatcttgcga ggaagagaaaa atactattta agggacagtc agagaacata  
851 12360  
E--> 853 atggattca aactttctgg gaaaacctac atacataaat gtatttagtgg ccattctaaa  
854 12420  
E--> 856 tgtctttata tctttgaggc tttatccctt cttactccaaa tagacacatt tagttattca  
857 12480  
E--> 859 tttcttttaa aatggtattt ctcttttaa actatttctt gactttttta ataaaaagag  
860 12540  
E--> 862 atgcaagcaa gaggatattt aataaaaagt aagagagttt agcttaaggc ttataaaaag  
863 12600  
E--> 865 accccccttt tctagttgtt caggagctct aatgtgcctt ggctacctat taaatggtgg  
866 12660  
E--> 868 caataaaactg gaagctcagt gatgactcta gcctgcttct cctaatacgat gttaaggcctc  
869 12720  
E--> 871 aatgccctt tagagtgtgt atgtccttta aagtagctat taagaaggaa agcagcagca  
872 12780  
E--> 874 gcagatattt tctagaaaga agcccaaga agctgagggtt tcagttggg cattttttt  
875 12840  
E--> 877 cggccatccca tgctccattt ccctctgctg gaactgtgca cctcagtgtt ttctccctct  
878 12900  
E--> 880 atacccatca gcaggaactg cttgcccccc cccccccccc ccaacataca tggctggAAC  
881 12960  
E--> 883 tgaatagact tttactttcc cgggggttctt ctacagttcc ctctgccagc aggggaacag  
884 13020  
E--> 886 atggaaatag caatcacctg ccagaagggtt gcgtgcagca aggatgtgca tcttttgcgg  
887 13080  
E--> 889 ctactgtttt ctgattccata aaaattactc agagatcaact catgtgttca gtgattcagg  
890 13140  
E--> 892 ttctgttggaa gataccaaag atattcggtt ggtcaaaatg acgggcataat aaaggcttct  
893 13200  
E--> 895 cagggttctg aggtaaaactg aagggtcaga attccagttt tggatgaagg aaatgggttt  
896 13260  
E--> 898 atgactgcctt caagggtttt tagcaagtca tagggAACCA agaggaatct tttttccctc  
899 13320  
E--> 901 agaggtcatg ccaactccaa ctcccggttcc ctaaactgtc tctgagccat agactagtaa  
902 13380  
E--> 904 tggactcttc aagctctacc attaggtatc ttttaaagaa agctgggttat tactatttat  
905 13440  
E--> 907 tcattttttt ctcttctgtt cagtgcaaaa gatatgaaac atccggctagg tttccctgt  
908 13500  
E--> 910 caaaaatctg attccctgttga acacaattct tcccacaaca agaaggacaa agtgggttatt  
911 13560  
E--> 913 tgccagaggtt aagagaaaag gccttgggtga agatgtactt agtattaact atctgtatgt  
914 13620  
E--> 916 ggggatgttc tgtgagaagg aacttgcgtt cctagttaaag ccagattttgg atcaagatag  
917 13680

*Part 1*

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001

TIME: 11:04:05

Input Set : A:\PITT00-539.asc

Output Set: N:\CRF3\09182001\I939209.raw

E--> 919 cctccat~~ttt~~ catggagatc ataactacat ttgaaatttc tata~~attt~~ta gt~~aaaa~~act  
920 13740  
E--> 922 g~~cc~~ctcatca ata~~ac~~atatt ttgtcataac gat~~gaa~~at a~~aa~~atcttgc c~~tt~~cattca  
923 13800  
E--> 925 ggat~~ctt~~aga tttctgccc caat~~ttt~~ttt accatggcat tccaattatt ctgtt~~tct~~t  
926 13860  
E--> 928 ctat~~ttt~~tc tag~~gt~~gagc caagaggaag tcaagaaatg ggctgaatca ctggaaaacc  
929 13920  
E--> 931 tgatt~~at~~gtca tgaat~~gt~~taag tctgacagca ac~~tgg~~atg aggtactctg gataagacaa  
932 13980  
E--> 934 gttat~~ttt~~at gctgg~~tct~~aa tagaaactgc agcaaggcct ggctt~~ttt~~tc tgatgtt~~cag~~  
935 14040  
E--> 937 actcaggaga ctctttaggt cttaaattca gtctgtt~~aa~~ aatttt~~taata~~ tgccctagag  
938 14100  
E--> 940 cttt~~gt~~gata tacaatgaaa agtttatgca ggaaccatgt ggaaaaccat ctctctcatc  
941 14160  
E--> 943 acaaggaaaa acggaagaga gaaaaaaaat gataa~~at~~atc aatac~~tt~~tct tgcaaaatca  
944 14220  
E--> 946 atctcagttt ctcttccca aattgac~~tt~~ ggtaatt~~tg~~at agctgcata~~g~~ c~~at~~ttcaga  
947 14280  
E--> 949 agcaaaat~~ac~~ ttcctgaaa gaggcttca acttgagtaa gaat~~catt~~at~~g~~ t~~g~~agaact~~gg~~  
950 14340  
E--> 952 gaaccactgg atatcaaaca cagatt~~agg~~gg ttac~~ct~~gact ccaggt~~gact~~ tgaaaaa~~agc~~  
953 14400  
E--> 955 agggaaaaaa gggattg~~c~~tt gaatccatgc tttatcccc aagtac~~ct~~ca gctttat~~gt~~g  
956 14460  
E--> 958 aaat~~at~~gcata tccaagaggc caacc~~at~~gt~~t~~ gat~~aca~~act gtgg~~t~~c~~ttt~~ ctcctgtatc  
959 14520  
E--> 961 atagg~~tgg~~gc tggcagctt caaagctt~~c~~ ttga~~gt~~tctg aatata~~gt~~ga ggagaatatt  
962 14580  
E--> 964 gactt~~ct~~g~~g~~ga tcagctgt~~g~~a agagtacaag a~~aa~~atcaa~~at~~ caccatctaa acta~~at~~ccc  
965 14640  
E--> 967 aaggccaaaa agatctataa tgaatt~~c~~atc tcag~~tcc~~agg caaccaa~~aga~~ ggtagg~~ttt~~  
968 14700  
E--> 970 ttatggatac ataaaaatt~~g~~ tac~~gt~~tattta tggag~~tat~~gt gt~~gat~~at~~ttt~~ gata~~cat~~gca  
971 14760  
E--> 973 tacaat~~gt~~ga taacaatcaa atcagg~~gg~~caa ttgctatata c~~at~~atctcaa acattt~~tta~~  
974 14820  
E--> 976 tt~~t~~ctac~~gt~~g ttgagaacat tccaaatctc ctctt~~ct~~tagc tatcttaaaa tata~~caata~~  
977 14880  
E--> 979 actat~~tt~~gata actat~~at~~cac c~~ta~~at~~gt~~gc tatcaa~~ac~~ac taga~~ac~~ctt~~at~~ tccctctacc  
980 14940  
E--> 982 caactt~~tt~~c~~t~~ tctatt~~c~~ttt ctacccat~~ta~~ gcca~~ac~~ctga c~~aaaa~~aggt a~~ag~~c~~ttt~~at  
983 15000  
E--> 985 ggcagagaac tctctggatc ttagtgaagg ttcct~~ta~~gaat agtggag~~ct~~g actat~~cata~~aa  
986 15060  
E--> 988 tcttgacaaac cccaaataaa t~~c~~ag~~ttt~~ttt aaaaaatctc tttatccat gtgg~~ctt~~acc  
989 15120  
E--> 991 ataac~~ct~~cccc tgc~~at~~gattt tttctgat~~g~~a atctccccaa tttgttagac aga~~ac~~agaag

*Murle*

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001

TIME: 11:04:05

Input Set : A:\PITT00-539.asc

Output Set: N:\CRF3\09182001\I939209.raw

992 15180  
E--> 994 atcttgcctt gctctctcta aagcagaaaag gttcattctg aacctttcat actctctcac  
995 15240  
E--> 997 atgtgccaag gaggacccc aatgtacttt tggggggggc ttctgaaata cagagggtgc  
998 15300  
E--> 1000 actgccactt acaagtcaact acaaagcata caggcttgc tcctcaacag ggatataagg  
1001 15360  
E--> 1003 ctaatgaagc cttggccttt gcccctcagg tgaaccttga ttcttgcacc agggaaagaga  
1004 15420  
E--> 1006 caagccggaa catgctagag cctacaataa cctgcttga tgaggcccag aagaagattt  
1007 15480  
E--> 1009 tcaacctgtat ggagaaggat tcctaccgc gcttcctcaa gtctcgattt tatcttgatt  
1010 15540  
E--> 1012 tggtcaaccc gtccagctgt ggggcagaaa agcagaaaagg agccaagagt tcagcagact  
1013 15600  
E--> 1015 gtgcctccct ggtccctcag tgccttgc ttcacccatg aggcagaggg atgaaatgcc  
1016 15660  
E--> 1018 aagactctat gctctggaaa acctgaggcc aaatattgtat ctgtattaaat ctccagtgct  
1019 15720  
E--> 1021 ttatccacat tgcgttgc tattcatgct gcctgcattt tgcgttgc ttcacccat  
1022 15780  
E--> 1024 aaactagata tagctttgg tgcgttgc ttcacccatg tgggacccca ttccagtgcca  
1025 15840  
E--> 1027 atttcctaa gtttcttgc ggggtccatg ggagcaataa tctaaataat ggcctggtag  
1028 15900  
E--> 1030 gtctggattt tcaaagattt tggcagttt ctcctccca acagtttac ctggggatgg  
1031 15960  
E--> 1033 ttggtagtgcatgtacat gacatccaca tgcacatgtt ttctgttgc cagcacgttc  
1034 16020  
E--> 1036 tccagactct agatgttttag atgagggttgc gctatgtat gtgtttgtgt gtatgtctat  
1037 16080  
E--> 1039 gtgtatatat tatataataca ttagacacac atatacatta tttctgtata tagatgtctg  
1040 16140  
E--> 1042 tgcgttgc tgcgttgc tgcgttgc tgcgttgc tgcgttgc tgcgttgc  
1043 16200  
E--> 1045 ttgcagatg tgcgttgc tgcgttgc tgcgttgc tgcgttgc tgcgttgc  
1046 16260  
E--> 1048 catgggtttt ttgtatcttgc ttctttcata ctacatttgc acagggcaaa atgaactaac  
1049 16320  
E--> 1051 tgccatgttag gctaaagaaa aatgctaac ctgtggaaag ttgggtttgtt aaaaattccat  
1052 16380  
E--> 1054 ggatcttgc ggagaagcat ccaaggaact tcatgttgc ttgtttttttt gacagccccc  
1055 16440  
E--> 1057 accttgcacat ctttgcacat gacatccaca ctttgcacat tttttttttt  
1058 16500  
E--> 1060 ggcacttttgc agcttgcacat ctgtggaaag ttgggtttgtt aaaaattccat  
1061 16560  
E--> 1063 ctatttagca gctgggttgc tatgggttgc gacatccaca tttttttttt  
1064 16620

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001

TIME: 11:04:05

Input Set : A:\PITT00-539.asc

Output Set: N:\CRF3\09182001\I939209.raw

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001

TIME: 11:04:05

Input Set : A:\PITT00-539.asc

Output Set: N:\CRF3\09182001\I939209.raw

1139 18120  
 E--> 1141 tctcaatcaa ttttcaaggg atagagttca cttccagag ccattcttt attccagtt  
 1142 18180  
 E--> 1144 acccgccgtt ttgagagatg atagagcagt gggaaattga gagagttgaa aggagctata  
 1145 18240  
 E--> 1147 gatttttacc caaacttcaa aaatccttcc ctccctttt ttaattctct ttcctggaaa  
 1148 18300  
 E--> 1150 agaggtcata aaatgttcac atcctcagta ataggccctg tgctgtgtct attatgtcat  
 1151 18360  
 E--> 1153 gagactccca tttcctgacc cttctttccc attgtaagag tagtagttac aaggtgttaa  
 1154 18420  
 E--> 1156 ggatagatga tcttcaacac ttttgagaaa tagatccatt tacggatctg gtaaaaacta  
 1157 18480  
 E--> 1159 tggaccgaac catcttttaa gaaaaaatt cagagaggaa tctaaatttt gtgtgtttt  
 1160 18540  
 E--> 1162 agggaaact ctcagaatct cccctcaaaa ctatcattct tctttataac tatagatgtg  
 1163 18600  
 E--> 1165 tcagactctc actgggactg tatagttgtc gctccctgta tttgataata tctatcaaga  
 1166 18660  
 E--> 1168 actgcagggt aattcaaagt cacgctttaa gcagcaagt tgagcagtgt tggtttcccc  
 1169 18720  
 E--> 1171 agtctctaca tccctcatcc tttctttctt cttatggtt gtctttaaaa gaaataaaaaa  
 1172 18780  
 E--> 1174 aaaatattgg ctgaccgtt ttctgaagat aatgtatatc aaggaccacc ttttgaaaaa  
 1175 18840  
 E--> 1177 cactcattat tcgagaacaa agacacaaca tacgagaatc tctggataac attcaaagca  
 1178 18900  
 E--> 1180 gtgtgttagag ggaaatttat agcactaaat gcccacaaga gaaagcagga aagatctaaa  
 1181 18960  
 E--> 1183 attgataccc taacatcaca attaaaagaa ctagaaaagc aagagcaaac acattcaaaa  
 1184 19020  
 E--> 1186 gctagcagaa gacaagaaat aactaagatc agagcagaac tgaaggaaat agagacacaa  
 1187 19080  
 E--> 1189 aaaacccttc aaaaaattaa tgaatccagg agctggttt ttgaaaagat taacaaaatt  
 1190 19140  
 E--> 1192 gatagactgc tagcaagact aataaagaag aaaagagaga agaatcaaat agacacaata  
 1193 19200  
 E--> 1195 aaaaatgata aaggggatat caccaccat cccacagaaa tacaaactac catcagagaa  
 1196 19260  
 E--> 1198 tactataaac acctctacgc aaataaacta gaaaatctag aagaaatgga taaattcctc  
 1199 19320  
 E--> 1201 gatacataca ccctcccaag accaaaccag gaagaagttg aatctctgaa tagaccaata  
 1202 19380  
 E--> 1204 acaggctctg aaattgaggc aataatcaat agcttacca caaaaaaaaag tccaggacca  
 1205 19440  
 E--> 1207 gatggattca cagctgaatt ctaccagacg tacaaagagg agctggtacc attccttctg  
 1208 19500  
 E--> 1210 aaactattcc aatcaataga aaaagagggaa atcctcccta actcatttta tgaggccagc  
 1211 19560

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001

TIME: 11:04:05

Input Set : A:\PITT00-539.asc

Output Set: N:\CRF3\09182001\I939209.raw

E--> 1213 atcatcctga taccaaagcc tggcagagac acaaccaaaa aagagaattt tagaccaata  
 1214 19620  
 E--> 1216 tccttgatga acattgatgc aaaaatcctc aataaaatac tggcaaaccg aatccagcag  
 1217 19680  
 E--> 1219 cacatcaaaa agcttatcca ccatgatcaa gtgggttca tccctggat gcaaggctgg  
 1220 19740  
 E--> 1222 ttcaacatac gcaaataat aatgtatac cagcatataa acagaaacaa agacaaaaac  
 1223 19800  
 E--> 1225 cacatgatta tctcaataga tgcagaaaag gcatttgaca aaatttaaca actttcatg  
 1226 19860  
 E--> 1228 ctaaaaactc tcaatcaatt aggtattgat gggacgtatc tcaaataat aagcactatc  
 1229 19920  
 E--> 1231 tatgacaaac tcacagccaa tatcatactg aatggcaaa aactggaagc attcccttg  
 1232 19980  
 E--> 1234 aaaacgggca caagacaggg atgcctctc tcaccactcc tattcaacat agtggaa  
 1235 20040  
 E--> 1237 gctctggcca gggcaattag gcaggagaag gaaataaagg gtattcaatt aggagaagag  
 1238 20100  
 E--> 1240 gaagtcaaat tgtccctgtt tgcagatgac atgattgtat atctagaaaa cccatcgtc  
 1241 20160  
 E--> 1243 tcagccaaa atctccttaa gctgataagc aacttcagca aagtctcagg atacaaaatc  
 1244 20220  
 E--> 1246 aatgtacaaa aatcacaagc actcttatac atcaataaca gacaaacaga gagccaaatc  
 1247 20280  
 E--> 1249 atgagtgaac tcccattcac  
 1250 20300  
 1253 <210> SEQ ID NO: 4  
 1254 <211> LENGTH: 480  
 1255 <212> TYPE: DNA  
 1256 <213> ORGANISM: Artificial Sequence  
 1258 <220> FEATURE:  
 1259 <223> OTHER INFORMATION: A genomic sequence occurring upstream of RGS4  
 1261 <400> SEQUENCE: 4  
 E--> 1262 ggattaatca tgacaaaagt aatctaaatc tcgttaagac tacttaatga tcaatcttc  
 1263 60  
 E--> 1265 cctctgtttt ccctgactat agggaaagtga attgccccaa tccttctcta tcaccccccct  
 1266 120  
 E--> 1268 gcagccatgc caatgcctta cctctgttat attcagccat agggaaagct tattctcata  
 1269 180  
 E--> 1271 gaatcagggg ttggcatgtt gtcactagct attcttggtg agactagtga agatgagtga  
 1272 240  
 E--> 1274 aggaaaaat tgcataaggaaat aatctcata ggcacaaata ggtgtttgtg agagtaacaa  
 1275 300  
 E--> 1277 taaaagaaaatc tattccat actcttagtag atgactcatt ttctcctcat tttttttttt  
 1278 360  
 E--> 1280 tcaaggcggtt ctctacaacg gttAACCTAG tacaaaaat cttctcttt tttctggac  
 1281 420  
 E--> 1283 aaatcctgtt caagtttagca tggcatttac tacgtccaag acattgtcca gatgctgtgg  
 1284 480

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

1287 <210> SEQ ID NO: 5  
1288 <211> LENGTH: 420  
1289 <212> TYPE: DNA  
1290 <213> ORGANISM: Artificial Sequence  
1292 <220> FEATURE:  
1293 <223> OTHER INFORMATION: A genomic sequence occurring upstream of RGS4  
1295 <400> SEQUENCE: 5  
E--> 1296 agagaaaagaa aggccaggcag caaggagaaa aaacatTTTT taaaaaaaaga aaattaaaaat  
1297 60  
E--> 1299 ccatgtatcg tctgatatct gttctgtgt atgtgttagat cttccatat accaactcat  
1300 120  
E--> 1302 tagccttatt ttacaggtga ggaaaatgag accgagagtc cttcttactt gaccaagttc  
1303 180  
E--> 1305 acacagcaag atcacacatg gtagaaccaa tggtagaacc taggtgtata cttgctcatt  
1306 240  
E--> 1308 caatatgtac aataattgca aaagtttcca taggtcttat tatatatcag gcactataaa  
1309 300  
E--> 1311 tgctatgcat gtgtcaacta atttaaacct aagcaatatt ataaggaagg tactattata  
1312 360  
E--> 1314 gaaatctcag ctttacaggt aaggaaacag gaataaagag atgtgaggta atggcccaag  
1315 420  
1318 <210> SEQ ID NO: 6  
1319 <211> LENGTH: 360  
1320 <212> TYPE: DNA  
1321 <213> ORGANISM: Artificial Sequence  
1323 <220> FEATURE:  
1324 <223> OTHER INFORMATION: A genomic sequence occurring upstream of RGS4  
1326 <400> SEQUENCE: 6  
E--> 1327 ataatctcct ttcaagttt tttcctgtca cttgttagtt gtgtgatttg ggacaaatca  
1328 60  
E--> 1330 tttaactcct tttaaaggga gagaaggaag gctgtaaaaa aattaagtaa taaaaagata  
1331 120  
E--> 1333 aactccttgt ggtatatttt gttattgttc aaaaatattt attgcccctc ttaggatgtc  
1334 180  
E--> 1336 ttaggtcatt cttgcattgc tataaagaaa taccaagtc tggtaattt ataaagaata  
1337 240  
E--> 1339 gaggttaaat tggctcacag ttctgcaggc tgcacaggaa gcatccact ggcgtctact  
1340 300  
E--> 1342 cacttctgggt gaggactcag aaagctttt cttatgacag caggctaagt gagagcaggt  
1343 360  
1346 <210> SEQ ID NO: 7  
1347 <211> LENGTH: 420  
1348 <212> TYPE: DNA  
1349 <213> ORGANISM: Artificial Sequence  
1351 <220> FEATURE:  
1352 <223> OTHER INFORMATION: A genomic sequence occurring downstream of RGS4  
1354 <400> SEQUENCE: 7  
E--> 1355 catggtatTTT ttactaccca ttgccttcta ggaaaggta taacaaatag gaaatattaa  
1356 60

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:05

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

E--> 1358 tatttttaat gccttgagg gtgttaaaaa gcacaactct aaggactgtt tgtaaattcc  
1359 120  
E--> 1361 aggtcaaatg ttgtttctcc ttctctattt cctaccttgg tcatggcctg atcttatatg  
1362 180  
E--> 1364 gagtcactcc aactagaaac cacagaatca tcccttagttc ctacttctga ctcactccat  
1365 240  
E--> 1367 acactcaaaa gtcacctgac tctgcagaat ttctctagaa aaactctatg aaaacctatt  
1368 300  
E--> 1370 cctgcctctc cacctgcata gatgttagttt catccaggtt cttatggtgc atggcctcg  
1371 360  
E--> 1373 ttactgcctt atcccttcta ctggcctctc aatctccat ctgataccca ttaatgtact  
1374 420  
1377 <210> SEQ ID NO: 8  
1378 <211> LENGTH: 360  
1379 <212> TYPE: DNA  
1380 <213> ORGANISM: Artificial Sequence  
1382 <220> FEATURE:  
1383 <223> OTHER INFORMATION: A genomic sequence downstream of RGS4  
1385 <400> SEQUENCE: 8  
E--> 1386 ccaaatactt tttaggcaca ctggaaagtt acattgttcc ttgcaagtga caggttgtcc  
1387 60  
E--> 1389 tttaattagt tctttctctc aaaaagagac tgctgactcc aaactggaa gaaacccact  
1390 120  
E--> 1392 caccagcaaa atgctgctga attcactctg atagtttctt aatctctcat cagtagatga  
1393 180  
E--> 1395 caataatgaa gccagtattt ttaccacaag actcagatat gtctatcacc caagatgatt  
1396 240  
E--> 1398 tctctttaag acgcaataaa agggaaacttt tctcccccatt tattagcaac taagatgaaa  
1399 300  
E--> 1401 tgagagccag agaaataaaag tgaggaagga aagagaattt actacccctta caagctgaaa  
1402 360

VERIFICATION SUMMARY  
PATENT APPLICATION: US/09/939,209

DATE: 09/18/2001  
TIME: 11:04:06

Input Set : A:\PITT00-539.asc  
Output Set: N:\CRF3\09182001\I939209.raw

L:7 M:283 W: Missing Blank Line separator, <120> field identifier  
L:12 M:270 C: Current Application Number differs, Replaced Current Application Number  
L:28 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:1  
M:254 Repeated in SeqNo=1  
L:235 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:3  
M:254 Repeated in SeqNo=3  
L:1262 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:4  
M:254 Repeated in SeqNo=4  
L:1296 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:5  
M:254 Repeated in SeqNo=5  
L:1327 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:6  
M:254 Repeated in SeqNo=6  
L:1355 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:7  
M:254 Repeated in SeqNo=7  
L:1386 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:8  
M:254 Repeated in SeqNo=8